

## **RAW SEQUENCE LISTING**

**The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.**

Application Serial Number: 10/779,418 PB  
Source: 1600 - EFS  
Date Processed by STIC: 6-30-05

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IFW16

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/779,418PB

DATE: 06/30/2005

TIME: 09:50:54

Input Set : N:\efs\10779418PB\_efs\4318244US-usbios-S000001.txt  
 Output Set: N:\CRF4\06302005\J779418PB.raw

3 <110> APPLICANT: Bisgard-Frantzen, Henrik  
 4       Svendsen, Allan  
 5       Vedel Borchert, Torben  
 7 <120> TITLE OF INVENTION: METHODS FOR PRODUCING SWEETENERS AND ALCOHOL  
 9 <130> FILE REFERENCE: 4318.224 US  
 11 <140> CURRENT APPLICATION NUMBER: 10/779,418PB  
 12 <141> CURRENT FILING DATE: 2004-02-12  
 14 <150> PRIOR APPLICATION NUMBER: 10/025,648  
 15 <151> PRIOR FILING DATE: 2001-12-19  
 17 <150> PRIOR APPLICATION NUMBER: 09/902,188  
 18 <151> PRIOR FILING DATE: 2001-07-10  
 20 <150> PRIOR APPLICATION NUMBER: 09/354,191  
 21 <151> PRIOR FILING DATE: 1999-07-15  
 23 <150> PRIOR APPLICATION NUMBER: 08/600,656  
 24 <151> PRIOR FILING DATE: 1996-02-13  
 26 <150> PRIOR APPLICATION NUMBER: PCT/DK96/00056  
 27 <151> PRIOR FILING DATE: 1996-02-05  
 29 <150> PRIOR APPLICATION NUMBER: DK 0126/95  
 30 <151> PRIOR FILING DATE: 1995-02-03  
 32 <150> PRIOR APPLICATION NUMBER: DK 0336/95  
 33 <151> PRIOR FILING DATE: 1995-03-29  
 35 <150> PRIOR APPLICATION NUMBER: DK 1097/95  
 36 <151> PRIOR FILING DATE: 1995-09-29  
 38 <150> PRIOR APPLICATION NUMBER: DK 1121/95  
 39 <151> PRIOR FILING DATE: 1995-10-06  
 41 <160> NUMBER OF SEQ ID NOS: 32  
 43 <170> SOFTWARE: PatentIn version 3.2  
 45 <210> SEQ ID NO: 1  
 46 <211> LENGTH: 485  
 47 <212> TYPE: PRT  
 48 <213> ORGANISM: Bacillus strain NCIB 12512  
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 53 1               5               10               15  
 56 Leu Pro Asn Asp Gly Asn His Trp Asn Arg Leu Arg Asp Asp Ala Ala  
 57       20               25               30  
 60 Asn Leu Lys Ser Lys Gly Ile Thr Ala Val Trp Ile Pro Pro Ala Trp  
 61       35               40               45  
 64 Lys Gly Thr Ser Gln Asn Asp Val Gly Tyr Gly Ala Tyr Asp Leu Tyr  
 65       50               55               60  
 68 Asp Leu Gly Glu Phe Asn Gln Lys Gly Thr Val Arg Thr Lys Tyr Gly  
 69       65               70               75               80  
 72 Thr Arg Asn Gln Leu Gln Ala Ala Val Thr Ser Leu Lys Asn Asn Gly

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| 73  | 85  | 90  | 95  |
| 76  | Ile Gln Val Tyr Gly Asp Val Val Met Asn His Lys Gly Gly Ala Asp |     |     |
| 77  | 100   | 105 | 110 |
| 80  | Gly Thr Glu Ile Val Asn Ala Val Glu Val Asn Arg Ser Asn Arg Asn |     |     |
| 81  | 115   | 120 | 125 |
| 84  | Gln Glu Thr Ser Gly Glu Tyr Ala Ile Glu Ala Trp Thr Lys Phe Asp |     |     |
| 85  | 130   | 135 | 140 |
| 88  | Phe Pro Gly Arg Gly Asn Asn His Ser Ser Phe Lys Trp Arg Trp Tyr |     |     |
| 89  | 145   | 150 | 155 |
| 92  | His Phe Asp Gly Thr Asp Trp Asp Gln Ser Arg Gln Leu Gln Asn Lys |     |     |
| 93  | 165   | 170 | 175 |
| 96  | Ile Tyr Lys Phe Arg Gly Thr Gly Lys Ala Trp Asp Trp Glu Val Asp |     |     |
| 97  | 180   | 185 | 190 |
| 100 | Thr Glu Asn Gly Asn Tyr Asp Tyr Leu Met Tyr Ala Asp Val Asp Met |     |     |
| 101 | 195   | 200 | 205 |
| 104 | Asp His Pro Glu Val Ile His Glu Leu Arg Asn Trp Gly Val Trp Tyr |     |     |
| 105 | 210   | 215 | 220 |
| 108 | Thr Asn Thr Leu Asn Leu Asp Gly Phe Arg Ile Asp Ala Val Lys His |     |     |
| 109 | 225   | 230 | 235 |
| 112 | Ile Lys Tyr Ser Phe Thr Arg Asp Trp Leu Thr His Val Arg Asn Thr |     |     |
| 113 | 245   | 250 | 255 |
| 116 | Thr Gly Lys Pro Met Phe Ala Val Ala Glu Phe Trp Lys Asn Asp Leu |     |     |
| 117 | 260   | 265 | 270 |
| 120 | Gly Ala Ile Glu Asn Tyr Leu Asn Lys Thr Ser Trp Asn His Ser Val |     |     |
| 121 | 275   | 280 | 285 |
| 124 | Phe Asp Val Pro Leu His Tyr Asn Leu Tyr Asn Ala Ser Asn Ser Gly |     |     |
| 125 | 290   | 295 | 300 |
| 128 | Gly Tyr Tyr Asp Met Arg Asn Ile Leu Asn Gly Ser Val Val Gln Lys |     |     |
| 129 | 305   | 310 | 315 |
| 132 | 320   |     |     |
| 133 | His Pro Thr His Ala Val Thr Phe Val Asp Asn His Asp Ser Gln Pro |     |     |
| 136 | 325   | 330 | 335 |
| 137 | Gly Glu Ala Leu Glu Ser Phe Val Gln Gln Trp Phe Lys Pro Leu Ala |     |     |
| 140 | 340   | 345 | 350 |
| 141 | Tyr Ala Leu Val Leu Thr Arg Glu Gln Gly Tyr Pro Ser Val Phe Tyr |     |     |
| 144 | 355   | 360 | 365 |
| 145 | Gly Asp Tyr Tyr Gly Ile Pro Thr His Gly Val Pro Ala Met Lys Ser |     |     |
| 148 | 370   | 375 | 380 |
| 149 | Lys Ile Asp Pro Leu Leu Gln Ala Arg Gln Thr Phe Ala Tyr Gly Thr |     |     |
| 152 | 385   | 390 | 395 |
| 153 | Gln His Asp Tyr Phe Asp His His Asp Ile Ile Gly Trp Thr Arg Glu |     |     |
| 156 | 405   | 410 | 415 |
| 157 | Gly Asn Ser Ser His Pro Asn Ser Gly Leu Ala Thr Ile Met Ser Asp |     |     |
| 160 | 420   | 425 | 430 |
| 161 | Gly Pro Gly Gly Asn Lys Trp Met Tyr Val Gly Lys Asn Lys Ala Gly |     |     |
| 164 | 435   | 440 | 445 |
| 165 | Gln Val Trp Arg Asp Ile Thr Gly Asn Arg Thr Gly Thr Val Thr Ile |     |     |
| 168 | 450   | 455 | 460 |
| 169 | Asn Ala Asp Gly Trp Gly Asn Phe Ser Val Asn Gly Gly Ser Val Ser |     |     |
|     | 465   | 470 | 475 |
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172 Val Trp Val Lys Gln  
 173 485  
 176 <210> SEQ ID NO: 2  
 177 <211> LENGTH: 485  
 178 <212> TYPE: PRT  
 179 <213> ORGANISM: Bacillus strain NCIB 12513  
 181 <400> SEQUENCE: 2  
 183 His His Asn Gly Thr Asn Gly Thr Met Met Gln Tyr Phe Glu Trp His  
 184 1 5 10 15  
 187 Leu Pro Asn Asp Gly Asn His Trp Asn Arg Leu Arg Asp Asp Ala Ser  
 188 20 25 30  
 191 Asn Leu Arg Asn Arg Gly Ile Thr Ala Ile Trp Ile Pro Pro Ala Trp  
 192 35 40 45  
 195 Lys Gly Thr Ser Gln Asn Asp Val Gly Tyr Gly Ala Tyr Asp Leu Tyr  
 196 50 55 60  
 199 Asp Leu Gly Glu Phe Asn Gln Lys Gly Thr Val Arg Thr Lys Tyr Gly  
 200 65 70 75 80  
 203 Thr Arg Ser Gln Leu Glu Ser Ala Ile His Ala Leu Lys Asn Asn Gly  
 204 85 90 95  
 207 Val Gln Val Tyr Gly Asp Val Val Met Asn His Lys Gly Gly Ala Asp  
 208 100 105 110  
 211 Ala Thr Glu Asn Val Leu Ala Val Glu Val Asn Pro Asn Asn Arg Asn  
 212 115 120 125  
 215 Gln Glu Ile Ser Gly Asp Tyr Thr Ile Glu Ala Trp Thr Lys Phe Asp  
 216 130 135 140  
 219 Phe Pro Gly Arg Gly Asn Thr Tyr Ser Asp Phe Lys Trp Arg Trp Tyr  
 220 145 150 155 160  
 223 His Phe Asp Gly Val Asp Trp Asp Gln Ser Arg Gln Phe Gln Asn Arg  
 224 165 170 175  
 227 Ile Tyr Lys Phe Arg Gly Asp Gly Lys Ala Trp Asp Trp Glu Val Asp  
 228 180 185 190  
 231 Ser Glu Asn Gly Asn Tyr Asp Tyr Leu Met Tyr Ala Asp Val Asp Met  
 232 195 200 205  
 235 Asp His Pro Glu Val Val Asn Glu Leu Arg Arg Trp Gly Glu Trp Tyr  
 236 210 215 220  
 239 Thr Asn Thr Leu Asn Leu Asp Gly Phe Arg Ile Asp Ala Val Lys His  
 240 225 230 235 240  
 243 Ile Lys Tyr Ser Phe Thr Arg Asp Trp Leu Thr His Val Arg Asn Ala  
 244 245 250 255  
 247 Thr Gly Lys Glu Met Phe Ala Val Ala Glu Phe Trp Lys Asn Asp Leu  
 248 260 265 270  
 251 Gly Ala Leu Glu Asn Tyr Leu Asn Lys Thr Asn Trp Asn His Ser Val  
 252 275 280 285  
 255 Phe Asp Val Pro Leu His Tyr Asn Leu Tyr Asn Ala Ser Asn Ser Gly  
 256 290 295 300  
 259 Gly Asn Tyr Asp Met Ala Lys Leu Leu Asn Gly Thr Val Val Gln Lys  
 260 305 310 315 320  
 263 His Pro Met His Ala Val Thr Phe Val Asp Asn His Asp Ser Gln Pro  
 264 325 330 335

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267 Gly Glu Ser Leu Glu Ser Phe Val Gln Glu Trp Phe Lys Pro Leu Ala  
 268 340 345 350  
 271 Tyr Ala Leu Ile Leu Thr Arg Glu Gln Gly Tyr Pro Ser Val Phe Tyr  
 272 355 360 365  
 275 Gly Asp Tyr Tyr Gly Ile Pro Thr His Ser Val Pro Ala Met Lys Ala  
 276 370 375 380  
 279 Lys Ile Asp Pro Ile Leu Glu Ala Arg Gln Asn Phe Ala Tyr Gly Thr  
 280 385 390 395 400  
 283 Gln His Asp Tyr Phe Asp His His Asn Ile Ile Gly Trp Thr Arg Glu  
 284 405 410 415  
 287 Gly Asn Thr Thr His Pro Asn Ser Gly Leu Ala Thr Ile Met Ser Asp  
 288 420 425 430  
 291 Gly Pro Gly Gly Glu Lys Trp Met Tyr Val Gly Gln Asn Lys Ala Gly  
 292 435 440 445  
 295 Gln Val Trp His Asp Ile Thr Gly Asn Lys Pro Gly Thr Val Thr Ile  
 296 450 455 460  
 299 Asn Ala Asp Gly Trp Ala Asn Phe Ser Val Asn Gly Gly Ser Val Ser  
 300 465 470 475 480  
 303 Ile Trp Val Lys Arg  
 304 485  
 307 <210> SEQ ID NO: 3  
 308 <211> LENGTH: 514  
 309 <212> TYPE: PRT  
 310 <213> ORGANISM: *Bacillus stearothermophilus*  
 312 <400> SEQUENCE: 3  
 314 Ala Ala Pro Phe Asn Gly Thr Met Met Gln Tyr Phe Glu Trp Tyr Leu  
 315 1 5 10 15  
 318 Pro Asp Asp Gly Thr Leu Trp Thr Lys Val Ala Asn Glu Ala Asn Asn  
 319 20 25 30  
 322 Leu Ser Ser Leu Gly Ile Thr Ala Leu Trp Leu Pro Pro Ala Tyr Lys  
 323 35 40 45  
 326 Gly Thr Ser Arg Ser Asp Val Gly Tyr Gly Val Tyr Asp Leu Tyr Asp  
 327 50 55 60  
 330 Leu Gly Glu Phe Asn Gln Lys Gly Ala Val Arg Thr Lys Tyr Gly Thr  
 331 65 70 75 80  
 334 Lys Ala Gln Tyr Leu Gln Ala Ile Gln Ala Ala His Ala Ala Gly Met  
 335 85 90 95  
 338 Gln Val Tyr Ala Asp Val Val Phe Asp His Lys Gly Gly Ala Asp Gly  
 339 100 105 110  
 342 Thr Glu Trp Val Asp Ala Val Glu Val Asn Pro Ser Asp Arg Asn Gln  
 343 115 120 125  
 346 Glu Ile Ser Gly Thr Tyr Gln Ile Gln Ala Trp Thr Lys Phe Asp Phe  
 347 130 135 140  
 350 Pro Gly Arg Gly Asn Thr Tyr Ser Ser Phe Lys Trp Arg Trp Tyr His  
 351 145 150 155 160  
 354 Phe Asp Gly Val Asp Trp Asp Glu Ser Arg Lys Leu Ser Arg Ile Tyr  
 355 165 170 175  
 358 Lys Phe Arg Gly Ile Gly Lys Ala Trp Asp Trp Glu Val Asp Thr Glu  
 359 180 185 190

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362 Asn Gly Asn Tyr Asp Tyr Leu Met Tyr Ala Asp Leu Asp Met Asp His  
 363 195 200 205  
 366 Pro Glu Val Val Thr Glu Leu Lys Ser Trp Gly Lys Trp Tyr Val Asn  
 367 210 215 220  
 370 Thr Thr Asn Ile Asp Gly Phe Arg Leu Asp Ala Val Lys His Ile Lys  
 371 225 230 235 240  
 374 Phe Ser Phe Phe Pro Asp Trp Leu Ser Asp Val Arg Ser Gln Thr Gly  
 375 245 250 255  
 378 Lys Pro Leu Phe Thr Val Gly Glu Tyr Trp Ser Tyr Asp Ile Asn Lys  
 379 260 265 270  
 382 Leu His Asn Tyr Ile Met Lys Thr Asn Gly Thr Met Ser Leu Phe Asp  
 383 275 280 285  
 386 Ala Pro Leu His Asn Lys Phe Tyr Thr Ala Ser Lys Ser Gly Gly Thr  
 387 290 295 300  
 390 Phe Asp Met Arg Thr Leu Met Thr Asn Thr Leu Met Lys Asp Gln Pro  
 391 305 310 315 320  
 394 Thr Leu Ala Val Thr Phe Val Asp Asn His Asp Thr Glu Pro Gly Gln  
 395 325 330 335  
 398 Ala Leu Gln Ser Trp Val Asp Pro Trp Phe Lys Pro Leu Ala Tyr Ala  
 399 340 345 350  
 402 Phe Ile Leu Thr Arg Gln Glu Gly Tyr Pro Cys Val Phe Tyr Gly Asp  
 403 355 360 365  
 406 Tyr Tyr Gly Ile Pro Gln Tyr Asn Ile Pro Ser Leu Lys Ser Lys Ile  
 407 370 375 380  
 410 Asp Pro Leu Leu Ile Ala Arg Arg Asp Tyr Ala Tyr Gly Thr Gln His  
 411 385 390 395 400  
 414 Asp Tyr Leu Asp His Ser Asp Ile Ile Gly Trp Thr Arg Glu Gly Val  
 415 405 410 415  
 418 Thr Glu Lys Pro Gly Ser Gly Leu Ala Ala Leu Ile Thr Asp Gly Pro  
 419 420 425 430  
 422 Gly Gly Ser Lys Trp Met Tyr Val Gly Lys Gln His Ala Gly Lys Val  
 423 435 440 445  
 426 Phe Tyr Asp Leu Thr Gly Asn Arg Ser Asp Thr Val Thr Ile Asn Ser  
 427 450 455 460  
 430 Asp Gly Trp Gly Glu Phe Lys Val Asn Gly Gly Ser Val Ser Val Trp  
 431 465 470 475 480  
 434 Val Pro Arg Lys Thr Thr Val Ser Thr Ile Ala Trp Ser Ile Thr Thr  
 435 485 490 495  
 438 Arg Pro Trp Thr Asp Glu Phe Val Arg Trp Thr Glu Pro Arg Leu Val  
 439 500 505 510  
 442 Ala Trp  
 446 <210> SEQ ID NO: 4  
 447 <211> LENGTH: 1455  
 448 <212> TYPE: DNA  
 449 <213> ORGANISM: Bacillus strain NCIB 12512  
 451 <400> SEQUENCE: 4  
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 454 gggaaatcatt ggaacagggtt gagggatgac gcagctaact taaagagtaa aggataaca 120  
 456 gctgtatgga tccccctgc atggaagggg acttcccaga atgatgtagg ttatggagcc 180

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 06/30/2005  
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Invalid <213> Response:

Use of "Artificial" only as "<213> Organism" response is incomplete, per 1.823(b) of New Sequence Rules. Valid response is Artificial Sequence.

Seq#: 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32

**VERIFICATION SUMMARY**

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